EG5101

Edge Computing Gateway
1 x Ethernet + 1 x RS-232 + 1 x RS-485 + 1 x USB

INTRODUCTION

The Robustel EG5101 is an industrial edge computing gateway delivering LTE Cat 1 cellular backhaul and ARMv7-based processing. Powered by an NXP i.MX 6ULL processor (792MHz), it combines cellular routing and embedded computing in a single platform. The Debian 11 (bullseye) based operating system supports Raspberry Pi-compatible applications, while Docker enables containerized deployment for resource-efficient edge workloads.

Integrated with **RobustOS Pro** - Robustel's hardened OS - the EG5101 provides enterprise-grade security (VPN/IPsec, smart roaming) and SMS-based remote management. Designed for cost-sensitive IoT deployments, it serves as a converged cellular router and embedded edge compute node for smart metering, asset tracking, and distributed monitoring in harsh industrial environments.
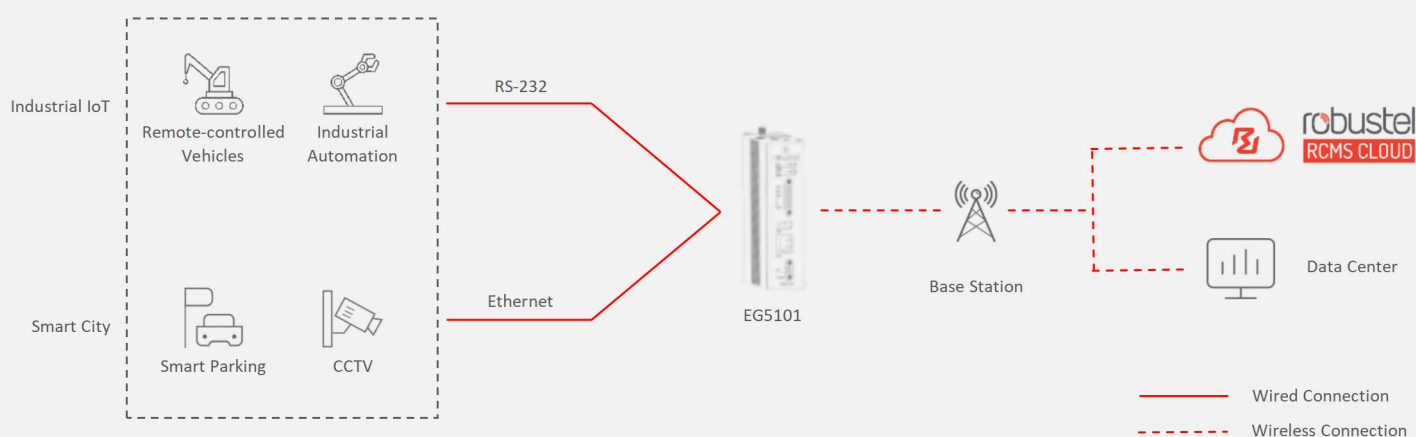
The **Robustel Cloud Manager Service (RCMS)** is a unified cloud-based platform designed for real-time monitoring and centralized management of industrial IoT devices. Fully compatible with Robustel routers and gateways, RCMS delivers an interactive geospatial dashboard that enables users to visualize device locations and track critical metrics such as data usage, signal strength, and network status. To ensure seamless operations, the platform facilitates over-the-air (OTA) updates for firmware, configurations, and applications, minimizing downtime while optimizing system performance. Experience robust, cloud-native device management by registering at: https://rcms-cloud.robustel.net

KEY FEATURES

- Industrial-grade LTE Cat 1 connectivity

- 8 GB eMMC Flash storage and ARM compute engine for edge applications

- Docker containerization with 50,000+ Debian-compatible packages

- 1 x RS-232 + 1 x RS-485 interfaces for PLC/legacy device integration

- Dual-SIM redundancy for redundant communications

- Wide operating temperature range for industrial applications

- Multi-language SDK support (C/C++/Java/Python/Node.js) and open toolchain

- Enterprise VPN suite (IPsec/OpenVPN/GRE/L2TP/PPTP/ DMVPN) and firewall policies

- RCMS platform (Robustel Cloud Management System) for large-scale device management

APPLICATION EXAMPLE

Industrial IoT
Remote-controlled Vehicles
Industrial Automation
RS-232
Smart City
Smart Parking
CCTV
Ethernet
EG5101
Base Station
Data Center
Wired Connection
Wireless Connection

SPECIFICATIONS

Hardware System

CPU	i.MX 6ULL, 792 MHz
RAM	512 MB DDR3/1 GB DDR3
Flash	8 GB eMMC

Cellular Interface

Number of antennas	1
Connector	SMA-K
SIM	2 x Mini SIM (2FF)

Ethernet Port

Number of ports	1 x RJ45, 10/100 Mbps
Magnet isolation protection	1 KV

Serial Port

Number of ports	1 x RS-232 + 1 x RS-485
Connector	6-pin 3.5 mm terminal block with lock
ESD protection	8 KV air, 4 KV contact
Baud rate	300 bps ~ 115200 bps
Signal definition	RS-232: TXD, RXD, GND
	RS-485: Data+ (A), Data- (B), GND

Others

Reset button	1 x RST
USB port	1 x USB 2.0 (host), Type A, 5 V, 500 mA
LED indicators	1 x RUN, 1 x RSSI, 1 x USR, 1 x MDM
Watchdog	External

Software (Basic features of RobustOS Pro)

Network protocols	PPP, PPPoE, TCP, UDP, DHCP, ICMP, NAT, HTTP, DNS, NTP, SMTP, Telnet, VLAN, HTTPs, ARP, SSH2, DDNS, etc.
VPN tunnels	IPsec, OpenVPN, GRE, L2TP, PPTP, DMVPN
Firewalls	DMZ, anti-DoS, Filtering (IP/Domain name/MAC address), Port Mapping, Access Control
Remote management	Web, CLI, SMS
Serial port protocols	Transparent, TCP Client/Server, UDP, Modbus RTU Gateway
Others	Smart Roaming V2

SDK

Operating system	RobustOS Pro (Based on Debian 11 Bullseye)
Supported programming languages	C, C++, Python, Java, Node.js, etc. (for users to develop own applications)
Debian repository available	
Flash available for SDK	6 GB
RAM available for SDK	256 MB/768 MB

App Center (Available Apps for RobustOS Pro)

Apps*	Language, RCMS, WireGuard, etc.

*Request on demand. For more Apps please visit www.robustel.com.

Cloud Platform

Robustel Cloud Manager Service (RCMS)	RobustLink, RobustVPN, Operation Console

Power Supply and Consumption

Connector	2-pin 3.5 mm terminal block with lock
Input voltage	12/24 V DC, 9 ~ 36 V DC
	Reverse polarity protection, surge protection
Power consumption	Idle: 1 W@12 V
	Max: 5.5 W@12 V
Recommended power supply	12 V DC/1.5 A power adapter

Physical Characteristics

Ingress protection	IP30
Housing & Weight	Metal, 374 g
Dimensions	32 x 105 x 134.8 mm
Installations	Desktop, wall mounting and 35 mm DIN rail mounting
Operating temperature	-20 ~ +70 °C
Storage temperature	-40 ~ +85 °C
Relative humidity	5 ~ 95% RH (non-condensing)

Regulatory and Type Approvals (*In Progress)

Environmental	RoHS2.0*
EMI	EN 55032 Conducted Emission Class B
	EN 55032 Radiated Emission Class B
EMS	EN 61000-4-2 (ESD) Contact Level 2, Air Level 3
	EN 61000-4-3 (RS) Level 2
	EN 61000-4-4 (EFT) Level 2
	EN 61000-4-5 (Surge) Level 3
	EN 61000-4-6 (CS) Level 2
	EN 61000-4-8 (PFM) Level 2

ORDERING INFORMATION

Model	Order Code	RAM	Enclosure	Frequency Bands*	Country /Region	Certification	Package Contains
EG5101-A-4E-A31EU	A013000005	512 MB DDR3	√	4G: LTE FDD: B1/3/5/7/8/20/28	EMEA+ANZ	CE RCM CB UKCA	1 x EG5101 Gateway (B Code: B130001) 1 x DIN Rail Mounting Kit
	A013000006						1 x EG5101 Gateway (B Code: B130001) 1 x DIN Rail Mounting Kit 1 x Cellular Antenna 1 x Power Adapter
EG5101-B-4E-A31EU	A013000007	1 GB DDR3	√				1 x EG5101 Gateway (B Code: B130002) 1 x DIN Rail Mounting Kit
	A013000008						1 x EG5101 Gateway (B Code: B130002) 1 x DIN Rail Mounting Kit 1 x Cellular Antenna 1 x Power Adapter
EG5101P-A-4E-A31EU	A013000009	512 MB DDR3	-				1 x EG5101 Gateway (B Code: B130003)
	A013000010						1 x EG5101 Gateway (B Code: B130003) 1 x Cellular Antenna 1 x Power Adapter
EG5101P-B-4E-A31EU	A013000011	1 GB DDR3	-				1 x EG5101 Gateway (B Code: B130004)
	A013000012						1 x EG5101 Gateway (B Code: B130004) 1 x Cellular Antenna 1 x Power Adapter

For more information about frequency bands in different countries, please contact your Robustel sales representative.